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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,730	09/30/2003	Saul C. Blum	RDH-0312	6351

7590 08/09/2005

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EXAMINER

FRANK, RODNEY T

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,730

Applicant(s)

BLUM ET AL.

Examiner

Rodney T. Frank

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aussieker (U.S. Patent Number 3,957,440), and further in view of Fritscher et al. (U.S. Patent Number 4,552,722; hereinafter referred to as Fritscher).

In general synopsis, the present claims are directed towards an apparatus for simulating corrosion activity. The nature of the problem to be solved is to have a device that performs an accurate and complete corrosion analysis by taking into account corrosion effects for both components in liquid and components that are affected due to condensation. The examiner has found various references that simulate corrosion activity in order to evaluate corrosion inhibitors. For example, U.S. Patent Number 3,364,000 (Stromberg) discloses an invention that uses the use of specific compositions for corrosion inhibitors such as for oil wells and refined mineral oils such as gasoline. A method of testing is disclosed utilizing a beaker that is heated up and a test coupon is suspended in the beaker containing the corrosive fluid (see column 13 under stirring test). These types of tests are well established in the art, but have no means of performing a test on the effects of condensation on a test coupon or sample. U.S. Patent number 3,131,029 (Dieman) discloses a system for accelerated

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condensation corrosion. This device uses a tank that delivers coolant to an apparatus whereby a coupon is suspended from a rotating tray and a fluid that is maintained in a humid chamber by heating in the tank bottom, eventually vaporizes and fills the tray, which is angled to allow run-off onto the test subject. The two tests are described quite adequately in the prior art separately, however, the present claims are directed towards an apparatus that appears to perform both test simultaneously. With this in mind, since both tests are well known in the art alone, one would be motivated to combine two disclosed testing methods in order gain at least two advantages. The first advantage would be to save time as the performing of both tests at the same time would be save time over performing one test for samples in fluid, and then performing another completely different test for condensation effects. Second, one would be able to get a whole picture of the corrosion effects if one were to take into consideration both tests and the results obtained from such a test could be better analyzed in order to truly determine an appropriate inhibitor to prevent corrosion. Further, sulfur compounds and naphthenic acids are known liquids that occur in such systems and the use of such liquids in order to simulate corrosion is considered well within the preview of one of ordinary skill in the art at various prior art references disclose the use of such liquids (see column 10 of Stromberg, for example).

With this in mind, and in view of the references, Aussieker discloses that an upright cylindrical vessel is formed with a plurality of fittings at its upper end to receive a thermometer, a stirrer, a reflux condenser, means for evacuating or pressurizing the vessel or the like, and is open at its other end which is provided with a circular bead. A

pair of clamping rings, one of which engages behind the bead, are bridged by clamping screws to secure a disk of the work piece material to the open end of the vessel. The corrosive medium is introduced into the vessel and attacks the work piece surface exposed therein (Please see the abstract).

In reference to independent claim 1, Aussieker discloses and shows in reference to the figure an apparatus for simulating corrosion activity in liquid environments comprising a container (1) with a lower region that, while the device is under test, contains the corrosive causing liquid, and an upper region including a condenser (a reflux condenser), a heater for heating the lower region (36) to maintain it at a specific temperature, a pump to provide a given pressure in an upper region (32 or 38), and a corrosion probe/coupon (12) removeably positioned in the liquid. This would encompass the corrosion in liquid. However, this system would be deficient for condensate corrosion environments and would only have a probe in the liquid.

However, Fritscher discloses a similar system that is concerned with condensate corrosion. Fritscher discloses that a sample of material which is to be exposed to a hot gas corrosion is suspended in a pipe and is irradiated with heat radiation through parabolic mirrors through the pipe. Beneath the sample of material, there is found a thermocouple element which is also arranged along the focusing line. The substance stimulating corrosion is provided in a crucible furnace which is heated separately. Through a gas connection, gas or steam is supplied in order to generate the atmosphere stimulating corrosion in the pipe. The variations in weight of the sample of material are continuously measured with a balance (Please see the abstract).

Now, again, with reference to claim 1, Fritscher discloses in reference to figure 1, an apparatus for simulating corrosion activity in condensate environments comprising a container (16) with a lower region that, while the device is under test, contains the corrosive causing liquid (19), and an upper region (32) including a condenser (cooling jacket 34), a heater for heating the lower region (20) to maintain it at a specific temperature, a pump to provide a given pressure (29, though at the lower end), and a corrosion probe/coupon/sample (14) removeably positioned above the liquid. This would encompass the corrosion in a condensate environment. The examiner would further like to point out that though bodily incorporation is not needed to substantiate a combination of references, the sample suspension and weighing device of Fritscher could be placed into the Aussieker test container if the stirrer (6) were removed and the hanging sample were placed inside instead since the stirrer is not disclosed to be essential to the performance of the test nor the overall operation of the apparatus. Conversely, since Fritscher discloses that the furnace has to be larger than the diameter of the sample, one of ordinary skill in the art could also size the furnace/crucible arrangement such that one could place another sample in said crucible to test the in-liquid corrosion effects of a sample.

In reference to claim 2, Fritscher discloses the container including an insulated column (10) whereby the lower region is a crucible in open communication with the column and the upper region is a condenser type arrangement in communication with said column as well.

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In reference to claims 3 and 4, both references disclose a means to inject a gas into the system. Though the type of gas is not explicitly disclosed, the use of nitrogen in corrosion simulation environments is well established in the art and one of ordinary skill in the art would know of its uses and therefore would be motivated to utilize it in either reference.

In reference to claim 5, both references disclose that the condenser arrangements are water cooled (Fritscher discloses a water cooling jacket in column 4 while Aussieker discloses a water cooled reflux condenser in column 3).

In reference to claim 6, though the use of glass hooks is not explicitly disclosed, the use of glass hooks as a suspension means is well established in the art of corrosion simulation, as stated above, and the suspension means disclosed in Fritscher is considered an functional equivalent.

In reference to claim 7, Fritscher discloses the use of thermocouples (15) to determine temperature and Aussieker discloses a resistance heater (5).

In reference to claim 8, though the type of pumping means is not specifically disclosed, official notice is taken that mechanical pumps are well known in the pump and/or pressure regulating arts.

In reference to claim 9, the use of corrosion tests to evaluate corrosion inhibitors is well established in the art and one of ordinary skill would utilize the data obtained from the test to evaluate corrosion inhibitors in order to produce better corrosion results for the systems that are being simulated.

Response to Arguments

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Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney T. Frank whose telephone number is (571) 272-2193. The examiner can normally be reached on M-F 9-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RTF
July 30, 2005


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800